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## Article

# Giving to versus Taking from In- and Out-Group Members

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**Abstract:** In this experiment, we test whether subjects' responses to variations in the action set in a dictator game depends on induced group identities. The action set includes choices in which the dictator can either give money to or take money from the other player. As an extension to the anonymous setting, we introduce induced group identities using the minimal group paradigm. Based on a dictator game conducted with more than 300 students in Indonesia, we implement a full factorial design in order to analyze the framing of the action set in a varied cultural context and to examine varied prevalence of social norms given a group identity context. If group identity is not salient, we find that participants are slightly more generous when they have an opportunity to give to rather than to take from the recipient. However, when participants are matched with in-group members, this result is reversed and highly significant. The result of differing responses to framing effects in within-group interactions compared to a neutral setting are largely ascribed to the varied compliance with existing social norms.

**Keywords:** social preferences; dictator game; giving and taking; social identity

## 1. Introduction

In this experiment, we test whether subjects' generosity in a dictator game depends on the available action set given variations in induced group identities. The action set comprises a give option and an isomorphically equivalent take option. Although, from a standard economic point of view, this difference should not matter, different framing may lead to disparate behavioral effects that influence decision making. In contrast to the give option, taking money away from an individual is socially condemned. According to Andreoni [1], a positively framed decision results in positive effects for other people, implying a warm glow, whereas a negatively framed decision has a negative impact on others and is associated with a cold prickle. Therefore, the action set investigates a possible difference between the two decisions, i.e. avoiding a cold prickle and inducing a warm glow. Even if the experimental literature tends to place a higher emphasis on the give option, outside the lab both variations are applicable in practical situations [2]. For instance, giving to charity on the one hand and availing the state's social welfare system on the other.

Former studies investigating a similar framing of the action set in the dictator game obtain mixed results. However, the vast majority do not find a difference in behavior. As the first study applying isomorphically equivalent give and take options, Suvoy [3] used a within subject design to assess

framing effects. This approach was extended by Bardsley [4] who finds an effect by adding take options to the previously positive choice set, but similar to Suvoy [3], the study does not find a difference in the isomorphically equivalent choice sets.<sup>1</sup> Dreber et al. [6] further control for participants' self-esteem related to role assignment and the game's wording as possible drivers of outcomes, but they report that allocations remain the same across strategies. By varying the recipient from unknown individuals to a charity, Grossman & Eckel [7] show that in the case of a donation to a charity, the initial allocation of the endowment does not affect behavior. In a further experiment Smith [8] finds that the social framing of strategies affects participants' beliefs about the decisions of others. The allocation decisions, however, remain unaffected by the framing. In a similar manner, Kettner & Waichman [9] discover differences between experienced students, inexperienced students and elderly people in playing a dictator game, but they also do not identify any difference in framing. Most recently, Georg et al. [10], compare the social framing of strategies in a dictator game to an equivalent version of a prisoner's dilemma. Here, the authors are able to detect a framing effect for the prisoner's dilemma, but report equal allocations in the dictator game. Given this evidence, it can be stated that the majority of studies do not find significant framing effects. However, there are some studies that do find differences between give and take options in a dictator game. For instance, Korenko et al. [11] find that participants are more reluctant to take money away from the other than to share their own endowment with the recipient. Also, Kettner & Ceccato [12], and Chowdhury et al. [13] were able to trace deviations in behavior to framing effects by exploiting gender differences.

Based on the evidence from dictator games using isomorphic give and take options in fully anonymous interactions, we broaden the environment in which decisions are taken by introducing group identities. This way we complement the existing literature by testing whether the commonly observed orthogonality of the framing of the action set on decision making is persistent when social context is introduced. The standard conceptualization of the dictator game involves the anonymity of interactions which is in conflict with the everyday life practice of sharing money with family members, close friends, or face-to-face transfers [4,7,14]. Therefore, we extend this setting by embedding decision-making in a social context. We build on the assumption stated in Charness et al. [15] that individuals' identification with a group leads to different behavior as compared to decisions they take in the absence of group identities. Sutter [16] elaborates on this idea by showing that it also applies in nonstrategic decision settings. Based on this evidence, we assume that the presence of group identities not only has a direct effect on behavior, but also can lead to varied responses to framing effects. Hence, cognitive effects and social circumstances invoked by the framing will vary in their degree depending on group identity treatments. The underlying driver of the variations across group identity treatments is identified in the varied social appropriateness of behavior, which moderates compliance with the prevailing social norms.

In order to foster the development of group identities, the study was conducted in Indonesia, a society characterized by a collectivist identity rather than more common individualistic societies of North America and Europe [17]. Indonesia varies compared to western countries in its sense of collectivism within the society that is shaped by ethnic, religious, cognitive, neighborhood, and other identities [18]. In a country comparison, comprising a sample of 103 countries, Indonesia ranks as the sixth most collectivist country, scoring the lowest on the individualism-scale among Asian as well as Muslim countries [19,20]. Based on this data, Indonesians can be perceived as a reasonable target population for the assessment of different effects resulting from variations in induced group identities.

In order to clarify the link between collectivism and group identity, the concept of collectivism, which originates from social psychology, has to be further explained. Collectivism is defined by

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<sup>1</sup> Closely related to [4], List [5] investigates give and take options in a dictator game. However, the results are not covered here, as the choice set is not isomorphically.

Triandis [21] as making strong distinctions between in-group and out-group members.<sup>2</sup> Therefore, collectivism can be characterized by a strong in-group–out-group distinction while subjects' behavior is regulated by in-group norms. Its counterpart, individualism, is defined as seeking to realize one's 'self' and to have one's own judgements being less sensitive to social pressure. Hence, individualists give personal goals priority over in-group goals [21,22]. Research in social psychology has shown distinctions in behavior between individualistic and collectivist societies, especially with respect to interaction within a group. For example, in Singelis et al. [23], communal sharing was found to be larger in collectivist societies. In addition, Yamagishi et al. [24] claim that the level of cooperation among in-group members is particularly pronounced in collectivist cultures given that group members are expected to act reciprocally in terms of cooperation. However, other empirical studies on this topic find mixed evidence for the existence of increased cooperation among subjects from collectivist cultures [25–27]. Regarding the discrimination towards outgroup members, Herrmann et al. [28] observe stronger anti-social punishment towards strangers in collectivist societies. They hypothesize that subjects perceive these strangers as belonging to an out-group. In direct relevance to our study, Levinson & Peng [29] show that cultural differences influence the perception of framing effects in the presence of an in-group–out-group distinction. Hence, there is evidence behavioral science on the interaction of social norms and preferences with group identity in collectivist societies.

As a result, we contribute to the literature first by reproducing the framing of the action set in a dictator game in a different cultural context to assess the robustness of previous results. Secondly, we augment previous studies by introducing social context to the framing of the action set. It is assumed that the introduction of group identities will affect responses to the framing of the action set, leading to outcomes that vary from the neutral treatment in which group identities are absent. Hence, we hypothesize an interactive pattern between give and take framings and group identity, which is mediated via salience of social norms.

Our findings provide weak evidence for a difference in the framing of the action set for the fully anonymous treatment. Introducing group identity treatments leads to highly significant differences in responses to framing effects in in-group interactions, reversing the effect's direction observed in the neutral setting.

The remainder of this paper is organized as follows. Section 2 presents the experimental design of the study. The results are presented in Section 3. A brief discussion of the results and a conclusion are provided in Section 4.

## 2. Experimental Design and Procedure

### 2.1. Design

We investigate the influence of social preferences and social norms in the most simplistic manner, using a dictator game [30]. In the dictator game, one participant, the 'dictator', can allocate money between herself and the other participant, the 'recipient'. The recipient is passive and has no influence over the outcome of the game. The dictator chooses how to allocate the money and may distribute the money as she pleases between the recipient and herself (e.g., [2]). The dictator game aims at assessing subjects' social preferences by putting dictators in a conflicting situation in which their own material interest competes with the material interest of others. Since the recipient has no active part in this game, the allocation of endowment are assumed to be influenced by the decision-maker's social preferences.

We ran our between-subject dictator game in six treatments according to a  $2 \times 3$  full factorial design.<sup>3</sup> The experiment was conducted using pen and paper and the participants' identity remained

<sup>2</sup> More precisely, "Emphasis on (a) the views, needs and goals of the (in)group; (b) social norms and duty defined by the group rather than pleasure-seeking; (c) beliefs shared with the group rather than beliefs that separate self from group; and (d) readiness to cooperate with the group" [21].

<sup>3</sup> The experimental instructions in English and Bahasa Indonesia can be found in the supplementary material.

anonymous to the other subjects throughout the whole experiment. The two dimensions of the design originate from the variations in induced group identities (STRANGER, INGROUP, OUTGROUP) and the action set that distinguishes between give (GIVE) and take (TAKE) options. The  $2 \times 3$  design of our experiment is summarized in Table 1 along with the number of independent observations in each treatment. Since each participant played both roles, i.e., ‘dictator’ and ‘recipient’, the observations are equal to the number of subjects in the table. In total, 307 participants took part in the experiment. The observations in the treatments range between 36 and 70.

**Table 1.** Number of observations in treatments.

		Induced Group Identities			Total
		STRANGER	INGROUP	OUTGROUP	
Action set available	GIVE	50	46	46	142
	TAKE	70	36	59	165
Total		120	82	105	307

## 2.2. Procedure

The verbal and written instructions were provided in Bahasa Indonesia. Prior to the assignment to groups, participants were asked to complete a grouping task. In the grouping task, participants were divided into groups applying the minimal group paradigm. The minimal group paradigm implies that induced group identities are established within the experiment and are based on trivial tasks with no link between the subjects’ self-interest and their choices. For this procedure, subjects are usually asked to choose between pictures of the artists Paul Klee and Wassily Kandinsky [31]. Since the experiment was conducted at an agricultural university with a focus on marine research, we adapted the procedure and participants were asked to choose their preference between photographs of five pairs of hard and soft corals.<sup>4</sup> The results were evaluated by establishing an index for the number of choices in favor of hard corals per participant. Based on this index, subjects were split in groups. Groups were assigned to the two rooms to ensure that matched subjects were always located in different rooms. At that point, subjects were not yet aware of the task they were to perform. In the rooms, they were assigned to places at sufficient distance from each other and instructions were provided on an instruction sheet.

The induced group identity settings consisted of participants receiving information on the group composition, in particular about whether their counterpart belonged to the same (INGROUP) or the other (OUTGROUP) group. This was complemented by a neutral treatment condition (STRANGER), in which case no information on the group composition was provided to participants.

Induced group identity was interacted between-subjects with the available action set, GIVE and TAKE, in order to assess the effect of varied endowment allocations across different induced group identity variations. In GIVE, participants were endowed with five tokens (1 token = 5000 Indonesian Rupiah <sup>5</sup> IDR) and were asked to make a decision about how many tokens they wanted to give to the ‘other player’ with whom they were randomly paired. In TAKE, the participant instructions mention that the ‘other player’ was endowed with five tokens and the participant should decide how many tokens to take from this other person.

Both treatments, GIVE and TAKE, are arranged to have the same incentive structure. This is given by the similar initial assignment and payoff structure. However, in GIVE the property right on the endowment is framed as belonging to the dictator while in TAKE the initial endowment is framed to be ascribed to the recipient.

<sup>4</sup> The grouping task in English and Bahasa Indonesia is provided in the supplementary material.

<sup>5</sup> 5000 IDR = \$0.38 USD as of March 2017.

### 2.3. Recruitment and Sample Properties

The experiment was conducted at Bogor Agricultural University, Indonesia in March 2017. Participants were recruited by word of mouth through lecturers in classes and advertisements on campus. Overall, eight sessions were run in seven days with the number of participants ranging from 16 to 77.

In Table 2, the sample properties are displayed. Participants were on average 23 years old and about 74 percent were female. The average perceived position in the income distribution in the range between 0 (lowest income) and 10 (highest income) is at 4.31 on a 10-point scale. In addition, around 89 percent of the participants stated “Muslim” as their religion and 67 percent had an economics or business background in their studies. Subjects were also distinguished by region of origin in Indonesia. The majority (209 out of 307) are from Java, whereas very few students are from Kalimantan (3), Bali (2), and Papua (1) in the sample.

**Table 2.** Sample properties.

Demographic	Variables
Age (%)	21.66 (3.83)
Female (%)	74.42
Income (category)	4.31 (1.56)
Married (%)	10
Muslim (%)	88.93
Econ. Student (%)	66.78
Region (%)	
Java	68.08
Kalimantan	1
Sumatra	19.54
Sulawesi	3.58
Bali	0.65
Papua	0.33
Other Regions/unknown	6.84

Note: Indicators obtained from post-experimental questionnaire. The numbers are means (std. dev.) for category and open-ended items and % in the indication items (Muslim, Married, etc.). Variables: Age (in years), Female (% of women), Income (categorical variable of perceived position in the income distribution ranging from 0 being the lowest income to 10 being the highest income), Married (% of married participants), Muslim (% of Muslims), Econ. Students (% of students with a major related to economic or business), Region (percentage of participants in sample from the particular region). Note that some students only filled in the decision sheet but left out the questionnaire.

### 2.4. Hypotheses

The variation in the action set, including GIVE and TAKE, are arranged to have no influence on allocation behavior of fully rational and selfish individuals. This implies that the dictator always acquires the maximum amount of tokens, leading to zero allocations to the recipient in both versions of the action set.

However, the transfer of significant shares of endowments to recipients is commonly observed in dictator games [2]. Furthermore, there is evidence that, given the existence of social norms, deviations in behavior in GIVE and TAKE can be expected. Many studies have shown the effect of social norms on people’s behavior [32,33]. Social norms are defined according to Krupka & Weber [34], in which the focus lies on injunctive social norms concerning the collective perception of the appropriateness of a certain behavior. Hence, within a population a norm defines the social legitimacy of an action. It is assumed that a deviation from the norm produces negative emotions. In the context of the dictator game, the social norm of sharing suggests that it is socially appropriate to share a positive amount of money with another person, especially when the recipient is deserving [2,35]. Another social norm is based on the concept of respecting people’s property rights [6]. The underlying paradigm is represented by the do-not-harm principle. It deals with people’s reluctance to benefit if it implies



another person's harm [36–38]. According to this principle, subjects are expected to hesitate in taking away tokens that are perceived as belonging to the recipient in TAKE.<sup>6</sup>

Although the norm of sharing as well as the do-not-harm principle both lead to a more generous behavior, it is hypothesized that the do-not-harm principle is stronger in compliance. In this context, Krupka & Weber [34] showed that variations in framing effects in dictator games are largely dependent on the prevalence of social norms. They also showed that by letting subjects rate the appropriateness of certain actions, the other people's actual decisions could be predicted. Based on this, their findings suggested that in the equivalent choice sets, taking away endowment is less socially appropriate than giving. Hence, a dominance of the do-not-harm principle is assumed when norms are salient. This is captured in the following hypothesis.

**Hypothesis 1.** *There will be higher allocations to the recipient in TAKE than in GIVE.*

Additionally, when introducing social group context to the task, subjects are no longer confronted with a fully anonymous counterpart, but rather act within an environment of observable group identities. Former studies suggest that group identity variations are able to evoke significant differences in behavior [15,16,31,40–42]. In particular, the compliance with social norms is likely to vary depending on the group identities. There is a strong interdependence between groups and social norms, as social groups represent a requirement to enable the emergence of norms, apply them in daily practice, and enforce them through group members [43]. Based on this, we assume that the perceived obligation to comply with a social norm is relatively weak in a fully anonymous setting. However, in within group interaction, social norms are more evident and their compliance is enforced. For interactions across groups, the opposite is hypothesized as group rivalry might lead to motivated reasoning eroding social norms. Therefore, we can summarize our expectations in the following hypothesis.

**Hypothesis 2.** *(a) Compared to STRANGER treatment, allocations to recipients will be higher for INGROUP and lower for OUTGROUP; (b) INGROUP allocations to recipients will be larger in TAKE than in GIVE; (c) in OUTGROUP, allocation to recipients will be larger in GIVE than in TAKE.*

### 3. Results

Our main findings are summarized in Table 3. We report the average endowment allocated by the dictator to the recipient across the variations in the action sets (GIVE vs. TAKE) and induced group identity settings (STRANGER vs. INGROUP vs. OUTGROUP). In addition, Table 3 also shows the share of all decisions in which participants allocated either nothing or the entire endowment to the recipient. First, we compare decisions across the action sets holding induced group identities constant. In STRANGER, participants contribute on average 1.96 tokens to the recipient in GIVE. With 1.56 tokens, contributions are significantly lower in TAKE ( $p = 0.042$ , Mann–Whitney-U (M–W U) Test).<sup>7</sup> Figure 1 contrasts the distribution of decisions made by participants in GIVE and TAKE for each variation in induced group identity. A comparably high occurrence of non-allocations to the recipient in TAKE can be observed in the upper graph of Figure 1 depicting the neutral setting. This provides further evidence for an effect of the action set in STRANGER. Moreover, the distributions show that the difference in means is driven by the large share of subjects allocating two tokens to the recipient in GIVE (52%). These tests are summarized in

<sup>6</sup> Also loss aversion represents a relevant concept which predicts higher allocations to the recipient in TAKE. As part of prospect theory, loss aversion describes the psychological effect that people obtain a higher reduction in utility from a loss than an increase in utility from an equivalent gain [39]. According to this, allocations in TAKE should be higher than in GIVE.

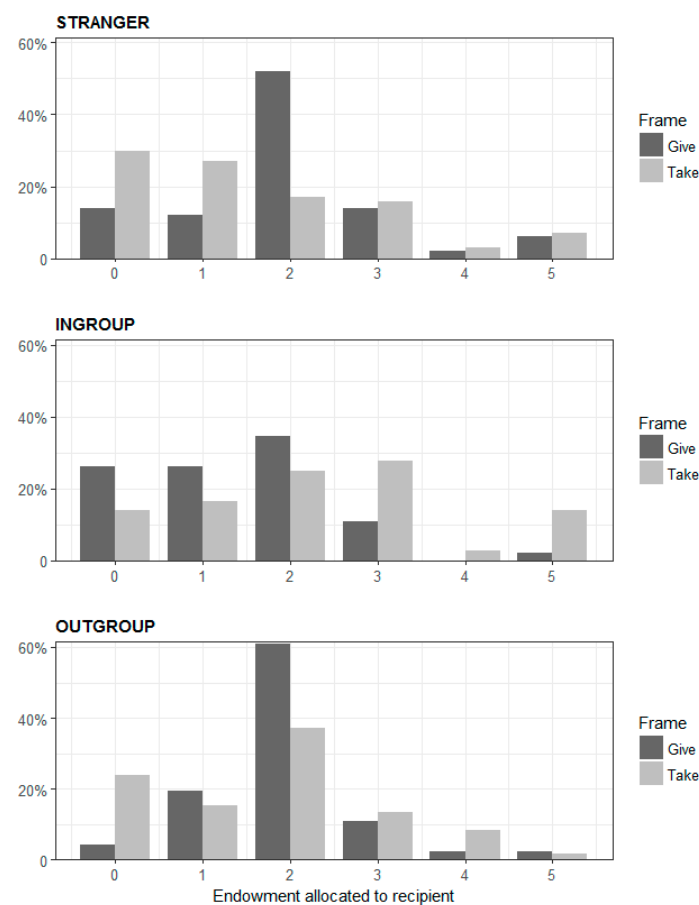
<sup>7</sup> However, the difference is not robust in significance towards multi-hypothesis testing. Robustness checks for all the estimates according to List et al. [44] can be found in Table A1 in the Appendix A.

- Result 1: In STRANGER, there is evidence that participants allocate significantly more to the recipient in GIVE than in TAKE.

Hence, subjects showed a tendency to behave more generously when initially endowed with five tokens compared to a situation in which the endowment is framed as the recipient's property. This sensitivity is in line with experiments allowing for giving and taking simultaneously, meaning that subjects are sensitive to extending the choice set towards the possibility of taking endowment from the other player [4,5,34,45,46]. However, studies for which choice options remain isomorphic in GIVE and TAKE, as in this experiment, mostly find no difference between GIVE and TAKE [3,6–9,13]. Regarding the hypothesized effects of larger allocation to the recipient in TAKE, this is not confirmed. Instead, there is evidence that sharing norms are stronger in this decision context. However, the result is weakened considering that the difference in GIVE and TAKE is not significant when controlling for multiple hypothesis testing (see Table A1 in Appendix A).

**Table 3.** Endowments allocated to recipient: mean values and number of participants (in parenthesis) across treatments.

	GIVE			TAKE		
	STRANGER	INGROUP	OUTGROUP	STRANGER	INGROUP	OUTGROUP
Avg. no. of tokens allocated to recipient	1.96	1.39	1.93	1.56	2.31	1.73
% of decision = 0	14	26	4.4	30	13.9	23.7
% of decisions = 5	6	2.2	2.2	7.1	13.9	1.7
Observations	50	46	46	70	36	59



**Figure 1.** Treatments compared within groups.



In INGROUP, participants allocate on average 1.39 tokens to the recipient in GIVE and leave 2.31 tokens to the recipient in TAKE, a substantially higher amount, ( $p = 0.0045$ , M–W U Test). In line with this, Table 3 states that in GIVE 26 percent of subjects chose not to allocate any tokens to the recipient, while only 2.2 percent decided to transfer all tokens to the recipient. In TAKE, 14 percent took the entire endowment for themselves and the same share of subjects chose to leave the whole endowment to the recipient. This divergence is confirmed in Figure 1 (middle graph) by showing a right-skewed distribution of token allocation to the recipient in GIVE, whereas the most common choice in term of recipients' share of tokens in TAKE is at three tokens following an upward sloped trend up to this point. This is summarized in

- Result 2: In INGROUP, participants allocate significantly less to the recipient in GIVE than in TAKE.

According to this, once subjects are asked to divide an initial endowment between themselves and an in-group member, a more generous behavior is observed given the initial endowment is framed as the recipient's property. This is in stark contrast to our first observation that participants in STRANGER tend to allocate slightly more to the recipients in GIVE than in TAKE. In line with Hypothesis 2b, the results indicate that subjects comply with the norms to respect the other's property to a larger degree than acting in accordance with sharing norms. In contrast, Hypothesis 2a cannot be confirmed. Although we observe higher allocations to in-group members in TAKE, the lower allocations in GIVE outweigh this effect for INGROUP ( $p = 0.7$ , M–W U Test). Hence, the results do not support the hypothesis that social norms are generally enforced when the group identity is shared.

In OUTGROUP, participants in GIVE allocate 1.93 tokens on average to recipients. This does not statistically differ from the 1.73 tokens in TAKE ( $p = 0.36$ , M–W U Test). The result suggests that subjects who split an initial endowment between themselves and an out-group recipient are on average unaffected by a change in the action set. However, by comparing the frequency of decisions that left the recipient without any endowment, a substantial increase in occurrence from 4.4 percent in GIVE to 23.7 percent in TAKE can be determined (see Table 3 and Figure 1—lower graph). The distribution of endowment allocated to the recipient in GIVE further differs from TAKE as a higher frequency of subjects chose to allocate two tokens to the recipient in GIVE. Hence, while this shows that there are distributional differences, these disparities do not seem to be large enough to produce significant differences on average. This leads to the following result.

- Result 3: In OUTGROUP, participants' average allocations to recipients do not differ between GIVE and TAKE.

Therefore, we do not find support for Hypothesis 2c, while looking at the averages. However, considering the substantially increased amount of subjects who have been willing to take everything away from the recipient, the results also indicate that in an out-group setting the norms of accepting others' property rights is weakened. In addition, Hypothesis 2a, which states that the allocations to recipients are the lowest in the out-group setting as social norms are eroded, cannot be confirmed. Comparing the allocations to recipients in STRANGER and OUTGROUP leads to insignificant differences in GIVE as well as in TAKE ( $p = 0.89$ ,  $p = 0.29$ , M–W U Test). Hence, there is no decrease in the level of allocations to the recipient compared to the neutral setting.

Our analysis led to an indication about differences in GIVE and TAKE given the recipient is from the same group as the dictator. To explore the robustness of these results and control for individual heterogeneity in participants' characteristics, we estimate an OLS regression model, which will be used to assess the effects between framings. In Table 4, we report the results. The dependent variable is the amount of tokens allocated to the recipient. The reference scenario captures the allocations of participants assigned to GIVE when paired with a fully anonymous person in the neutral setting (STRANGER). The dummy variable TAKE covers the assignment to TAKE. Its coefficient will report the difference in allocations to recipients in TAKE compared to allocations made to recipient in GIVE in the

STRANGER condition. Therefore, we will call this difference the ‘take effect’, as it states the difference in outcomes resulting from the two framings. The dummy variables INGROUP and OUTGROUP denominate assignments to the in- or out-group, respectively. As controls, demographic characteristics were used. Our different treatment conditions represent further variables. The interaction terms capture whether the effect of changing the action set from GIVE to TAKE depends on the recipient belonging to the in-group compared to interactions in a neutral setting ( $\text{INGROUP} \times \text{TAKE}$ ). The other interaction term controls for the same effect, but compares between OUTGROUP and STRANGER ( $\text{OUTGROUP} \times \text{TAKE}$ ). Hence, these interaction terms report the difference in the take effects. The coefficient of  $\text{INGROUP} \times \text{TAKE}$  will state the difference in the take effect in STRANGER and the take effect in INGROUP. Correspondingly, the coefficient for  $\text{OUTGROUP} \times \text{TAKE}$  reports the difference in the take effect in STRANGER and the take effect in OUTGROUP. In the following, we will refer to these differences in take effects as ‘GAP’. The regression results in Table 4 report an insignificant take effect, indicating no difference in the action set in STRANGER when controlling for demographic variables. This reveals a lack of robustness of Result 1, for which a significant difference between framings in STRANGER was determined using a M–W U Test. The dummy capturing the interaction between TAKE and INGROUP ( $\text{INGROUP} \times \text{TAKE}$ ) is statistically different from zero ( $p = 0.002$ ), implying that the take effect differs between INGROUP and STRANGER, which confirms the previous findings. This can be explained by the observed behavior across induced group identities. In GIVE, average allocations to the recipient are lower when participants are matched with a member of their own group relative to allocations in STRANGER. In TAKE however, allocations are on average higher in INGROUP compared to STRANGER.

- Result 4: The difference in the take effect differs between STRANGER and INGROUP. The GAP is significantly different from zero.

**Table 4.** OLS regression of allocations to recipient.

	(OLS)
VARIABLES	Recipient’s tokens
TAKE	−0.446 (0.1157)
INGROUP	−0.063 * (0.445)
OUTGROUP	−0.139 (0.1857)
$\text{INGROUP} \times \text{TAKE}$	1.325 ** (0.187)
$\text{OUTGROUP} \times \text{TAKE}$	0.351 (0.286)
Age	0.051 (0.038)
Female	−0.178 (0.134)
Muslim	0.548 * (0.107)
Income	0.035 (0.027)
ParentEd	−0.0149 (0.0401)
Married	0.042 (0.231)
Econ	0.146 (0.116)
City	−0.037 (0.058)
Jakarta	−0.0128 (0.0996)
Sumatra	−0.104 (0.058)
Sulawesi	−0.347 (0.0953)
Other Regions	−0.173 (0.113)
CONSTANT	0.454 (0.348)
Observations	299
R-squared	0.0962

Note: Indicators obtained from post-experimental questionnaire. The numbers are means (std. dev.) for category and open-ended items and % in the indication items (Muslim, Married, etc.). Variables: TAKE (Dummy = 1 if in treatment TAKE), INGROUP (Dummy = 1 if in treatment INGROUP), OUTGROUP (dummy = 1 if in treatment OUTGROUP), Age (in years), Female (dummy = 1 if woman), Muslim (Dummy = 1 if Islam stated as religion), Income (categorical variable of monthly net income in 0–5 clusters), ParentEd (Education of Partents on a scale from 0–7), Married (Dummy = 1 if stated to be married) Econ (Dummy = 1 if field of study related to economics), City (Dummy = 1 if from a region with a city larger than 1 mil inhabitants), Java (dummy = 1 if from region Java) is omitted region dummy, Jakarta (Dummy = 1 if from Jakarta), Sumatra (Dummy = 1 if from region Sumatra), Sulawesi (Dummy = 1 if from region Sulawesi), Other Region (Dummy = 1 if from other than the previous regions). Robust standard errors in parentheses, \*  $p < 0.05$ , \*\*  $p < 0.01$ .

This provides support for the assumptions stated in Hypothesis 2b for the in-group setting, which suggested an increase in the take effect due to stronger compliance with the do-not-harm principle in TAKE. Hence, there is a variation in reactions to framing effects depending on induced group identities.

In contrast, we do not find that the take effect differs between OUTGROUP and STRANGER ( $p = 0.571$ ).

- Result 5: The difference in the take effect does not differ between STRANGER and OUTGROUP. The GAP is not significantly different from zero.

These findings do not confirm Hypothesis 2a, which states that allocations to recipients in OUTGROUP differ to those in the neutral setting due to the reduced compliance with social norms. Instead, similar allocations as in STRANGER are observed.

Post estimate analysis shows that the GAP for INGROUP and OUTGROUP also differs significantly ( $p = 0.023$ ), which is similar to Result 4. Furthermore, it confirms the highly significant difference between GIVE and TAKE in INGROUP ( $p = 0.007$ ), while the difference remains insignificant for OUTGROUP ( $p = 0.585$ ). Hence, the regression results confirm the previous findings (result 2–5).

The results show indeed different responses to framing effects given variations in the social context. While between-group interaction produced similar results as the neutral setting, the hypothesis of a stronger compliance with the do-not-harm principle in an in-group setting was confirmed. In GIVE subjects also respond differently to framing effects than in other settings of the game. However, instead of showing a larger willingness to follow the norm of sharing, the average allocations to the recipient are reduced. Since this result is difficult to explain with the current set of hypotheses, further investigation is needed.

In order to assess possible explanations, a post-analysis questionnaire was compiled. This questionnaire comprises questions about students' values and redistributive behavior across and within groups as well as appropriateness of sharing within groups. It was conducted in April 2018 with 112 students from Bogor Agricultural University, Indonesia.<sup>8</sup> The questionnaire was divided into two parts: the first part aimed at eliciting values and the second set of questions aimed to induce in-group and out-group rationale.

A part of the questionnaire dealt specifically with the appropriateness of sharing within groups. The questions differ over variations in group affiliation of actors. Based on the approach by Krupka and Weber [34], the particular questions in the questionnaire can be used to assess whether the social norm of sharing is stronger in a within group setting compared to a neutral setting, as assumed in Hypothesis 2a. The question describes a hypothetical situation, in which a person gains windfall money and does not share it with another person. This other person is a stranger in one scenario and a colleague in the other. In each scenario, students are asked to rate the appropriateness of such behavior. It is assumed that insights into the existence and prevalence of sharing norms can be gained by rating the appropriateness of behaviors in these two scenarios. The order of appearance of the stranger and colleague questions was randomized.

The results on the sharing questions suggest that individuals do not rate the appropriateness of sharing with a stranger and sharing with a colleague differently. With values close to four on a 1 to 10 scale, subjects rated the behavior of not sharing with a stranger or a colleague as rather inappropriate in both cases ( $p$ -value = 0.6376,  $t$ -test). Hence, this result suggests no enforcement in sharing norms when sharing the same group identity with another person. To a certain degree, this provides explanation for the experimental results. Given that egoistic behavior towards an anonymous person

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<sup>8</sup> The questionnaire in English and Bahasa Indonesia can be found in the supplementary material. The survey link was distributed to students by university authorities and was accessible online. Although it is likely that the survey sample does not exactly contain the same subjects as in the experiment, the participants in the survey and the experiment share the most important characteristics.

in a sharing opportunity context is socially as accepted as it is with a group member, no increase in giving is expected when dictators are paired with group members instead of strangers.

#### 4. Discussion and Conclusions

To recap, the results provide weak evidence for a framing effect in absence of a social context. Hence, the findings in this neutral setting do not severely deviate from the outcomes of previous studies because the significant difference in framing effects fades when controlled for multiple hypothesis testing. Consequently, we do not find support for Hypothesis 1. Similarly, most other studies find no difference in framing of the action set [3,6–10]. Since our result for the neutral setting is largely in line with most of the previous studies, approximate comparability in behavior across the subject pools can be assumed.

Also, the conjecture of Hypothesis 2c was not confirmed, as subjects allocated similar amounts to GIVE and TAKE in cases of pairing with a person from the other group compared to the neutral setting. This indicates a minor role of rivalry between members of different groups. Contrary to the assumptions, there are no signs that subjects begrudge individuals from other groups for obtaining benefits based on one's own decisions. Such effects could have led to erosion of social norms, leading to reduced generosity towards recipients. Instead, the results hint at the interpretation that out-group members are perceived as neutral subjects, socially as distant as a complete stranger. This might be explained by the minimal group paradigm's insufficiency to evoke negative associations with members from the other groups. In order to provoke these, a history of past interactions might be required, especially if beneficial in-group decisions are to be made on the expense of out-group members' welfare. Instead, the method seems to be well able to form social ties among in-group members.

In contrast to the other settings, in-group interactions indeed vary from the commonly observed findings. Here, the results showed that framing the decision in a 'give' choice induces individuals to share lower amounts than in the neutral setting. Although this outcome appears counterintuitive, the literature on beneficial treatments of group members (group favoritism) also reports mixed results for the 'give' option in dictator games [47]. As a possible explanation, the group heuristic model states that altruism towards group members is regarded as a strategic action to gain access to a generalized exchange system [40]. Since the dictator game is a one-shot game, there is no reason to apply such strategic behavior. In addition, a post-analysis questionnaire analyzes whether varying the social context from a neutral to an in-group setting leads to a norm shift by eliciting the appropriateness of sharing behavior in a neutral setting and in within-group interactions. The result reveals that socially expected behavior in the two scenarios are identical, indicating that the social norm of sharing does not change when an in-group context is introduced. Furthermore, investigations by Winterich et al. [48] provide an example of in-group discrimination in a donation decision. Their results suggest that a non-negligible share of participants donate more to out-group than in-group members. The decision of these individuals was mediated by an intent to include 'Other' in 'Self'. Thus, higher donations to out-group members might be regarded as means of integrating another person. Related to the results, the reduced generosity to recipients in the 'give' choice prevent the allocations over 'give' and 'take' in in-group interactions to be significantly higher than in the neutral setting. Therefore, we do not find support for Hypothesis 2a.

When subjects were paired with a group member, a higher reluctance to take money away from the recipients in an in-group setting was observed. The stronger salience of the do-not-harm principle given interactions within groups is supposed to drive the results by functioning as a mediator. This principle can be considered as a relatively strong social norm, as suggested by other studies Krupka and Weber [34]. In the neutral and the out-group decision environments, the do-not-harm principle is also assumed to be present as the prevailing social norm in the take variation of the action set. However, its enforcement appears to be less binding than in the in-group setting. Hence, by varying the social context exogenously, a systematically different response is revealed. Those who encountered a group member showed larger reluctance in seizing endowment that was framed as the

recipient's property. This suggests that across the variations in induced group identity, social norms are likely to be activated to different degrees. Hence, in-group environments seem to be effective in limiting self-interested behavior by increasing the compliance with strong social norms. Therefore, we assume the stronger effect of social norms to be the major cause for this change in behavior in the in-group setting. A possible reason for this might be that taking—more precisely, not taking away other's property—is associated with a much stronger and commonly accepted norm of not harming other people, whereas sharing norms are relatively weak. This suggests that it requires strong norms, like the do-not-harm principle, to observe an enforced compliance in socially close interactions.

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## Appendix

**Table A1.** Results adjusted  $p$ -values by multiple hypothesis testing according to List et al. [44].

Treatment Groups	DI	$p$ -Values				
		Unadj.	Multiplicity Adj.			
		Remark 3.1	Thm. 3.1	Remark 3.7	Bonf.	Holm
GIVE STRANGER vs. TAKE STRANGER	0.4	0.11	0.2	0.2	0.32	0.22
GIVE INGROUP vs. TAKE INGROUP	0.9	0.01 **	0.01 *	0.01 *	0.02 *	0.02 *
GIVE OUTGROUP vs. TAKE OUTGROUP	0.21	0.33	0.33	0.33	1	0.33

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$ .

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